

Unit 8 Module A Notes Sections 21.1 -21.2

View the PowerPoint, Videos, or Textbook for Module 8A.

Vocabulary **Fill in the blanks.**

1. (Section 21.1) The $\sqrt{\quad}$ symbol is called a _____. The expression written under the $\sqrt{\quad}$ is called the _____.
2. (Section 21.1) The _____ square root of a nonnegative number is its nonnegative square root.
3. (Section 21.1) The number c is the _____ root of a if $c^3 = a$.
4. (Section 21.1) In the expression $\sqrt[k]{a}$ we call k the _____ and assume $k \geq 2$.
5. (Section 21.2) For any nonnegative real number a and any natural number index n ($n \neq 1$) $a^{1/n}$ means _____ (the nonnegative n^{th} root of a).
6. (Section 21.2) For any natural numbers m and n and any nonnegative real number a , _____ means $(\sqrt[n]{a})^m$ or $\sqrt[n]{a^m}$.

Problems **Show ALL steps.**

1. (Section 21.1) If $g(x) = \sqrt{2x+4}$ find:
 - a. The domain of g
 - b. $g(6)$

Name: _____

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Date: _____

Class Time: _____

2. (Section 21.1) Find each of the following. Assume that variables can represent *any* real number.

a. $\sqrt{\frac{25}{64}}$

b. $\sqrt{9(y-1)^2}$

c. $\sqrt[3]{-64}$

d. $-\sqrt[7]{(x+5)^7}$

3. (Section 21.2) Rewrite without rational exponents and simplify: $125^{2/3}$

4. (Section 21.2) Use rational exponents to simplify: $\sqrt[6]{a^3 b^{12}}$

5. (Section 21.2) Write as a single radical expression: $\frac{x^{3/2} y^{7/8}}{x^{3/4} y^{5/8}}$